

Geological Characteristics and Resource Potentials of Oil Shale in Ordos Basin, Center China

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It has been shown that not only there are abundant oil, gas, coal, coal-bed gas, groundwater and giant uranium deposits but also there are abundant oil shale resources in Ordos basin. The main oil shale formations (abbrev. OSF) are, respectively, the Shanxizu Formation (early Permian), the upper of the lower bench of Yanchangzu Formation (middle -late Triassic), the Wayaobaozu Formation (late Triassic), the Yananzu Formation (early stage of middle Jurassic) and the Andingzu Formation (late stage of middle Jurassic). Oil shale were, usually, in formations buried at the center of the basin. Both Yanchangzu Formation and Yananzu Formation were the two main oil shale Formation. Oil shale in early Permian was formed in paralic offshore, and in middle -late Triassic was formed in terrestrial facies (batho and half -batho lacustrine), and in late Triassic and early middle Jurassic was formed in terrestrial facies lake delta and lake bog. And it was paragenesized together with coal layers (abbrev. CL). But oil shale in late middle Jurassic was, merely, confined in half batho lacustrine. It has been shown also that the thickness of oil shale is, usually, 4-36m, oil-bearing 1.5%-13.7%, caloric value 1.6 - 20.98MJ/kg, apparent density 1.55-2.46 by dissecting the oil shale in northern -Tongchuan of Shaanxi, China and Tanshan of Guyuan of Ningxia, northwest-China. The amount of oil shale with burial depth less than 2000 m is (334) over 2000×108t. Within it, confirmed reserve is about 1×108t (121), which displays a giant resource future. The bury depth of oil shale in both southeastern and western parts of the basin is shallow; part of it has been verified to be high quality. With excellent road conditions connecting to outside the basin, it is not only huge economic benefit to develop the oil shale in time, but also precious experience in developping oil shale may be obtained in Ordos basin.